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BOTANICAL GAZETTE

JULY, 1894.

Undescribed plants from Guatemala and other Central American Republics.¹ XIII.

JOHN DONNELL SMITH.

WITH PLATES XXIV—XXVI.

Heisteria Costaricensis Donnell Smith. (§ LEIOPARÆ Engl.)—Folia disticha anguste linear-lanceolata juxta basim acute angustata supra medium sensim in apicem mucrunculatum attenuata, margine adpresso retroflexo, petiolo brevi decurrente. Calyx urceolatus post anthesim retroflexus pedicelli dimidium æquans, dentibus brevibus triangularibus in setam desinentibus. Petala libera obovata ad apicem emarginata calyce sublongiora. Ovarium perianthium paullo superans latior quam longior collo coronatum. Calyx fructiferens coriaceus patulus pentagono-orbicularis cum pedicello breviore sanguineus subitus maculis albis notatus. Drupa ovata-globosa calycis radio brevior atro-cyanea.

A large bush with slender, drooping, and closely leafy branches that are toward their tips flexuose and angulate. Leaves 6–8ⁱⁿ × 9–11¹, membranaceous, pellucid-punctulate, glaucescent beneath. Petiole 3–4¹ long, decurrent in narrow wings. Flowers scarcely a line high, apparently solitary. Stamens not seen. In fruit, pedicel 3½–4½¹ long, calyx 10–12¹ in diam. Drupe 5×4¹.—The only other species described, with similarly narrow leaves, *H. salicifolia* Engl. from South Brazil, is distinct by its calyx, which in fruit is cupuliform, deeply lobed, plicate and enclosing the pale drupe.—Forest on Rio Reventazón, Prov. Cartago, Costa Rica, alt. 2,000^{ft}, Mch. 1894, J. D. S., (ex Plantis Guatimalensis necnon Salvadorensis Honduras Nicarguensis Costaricensibus, quas edidit John Donnell Smith, 4,760).

¹The title of these papers, as well as that of the tickets accompanying the distribution of plants, has been changed to the form here employed, in order to include in the series some collections from other parts of Central America.

Cuphea Heydei Koehne (inserenda post *C. Liebmannii* Koehne in Engler's Bot. Jahrbüch. 2: 409. 1882. Sect. x. MELVILLA Koehne, subsect. 5. Erythrocalyx Koehne). ICON: Koehne Atlas Lythracearum ined. t. 44. fig. 380.—Fruticulus *ramis junioribus dense hispidis* *vetustioribus* glabratiss. Folia internodiis 2–3-plo longiora, basi acuta vel in petiolum 1–4^{mm} longum hispidum attenuata, elliptica v. lanceolata (24–54^{mm}: 11–17^{mm}), longe acuminata, parce ciliata, superiore pagina parce, inferiore in nervis densius hispida, vix rigidula, subtus pallidiora. *Flores solitarii; pedicelli axillares* 9–20^{mm} æquantes, parce hispida, prophylla minutissima, quasi in setas 3–4 dissoluta summo apice gerentes. Calyx (22–26^{mm}) calcare orbiculari dilatato subincurvo (fere 3^{mm} longo latoque) instruc-
tus, subrectus, subgracilis, infra faucem ascendentem valde dilatatam plicatam subangustatus, verisimiliter intense coccineus, infra medium hispidus, intus glaberrimus; *lobi brevissimi*, *setis 4–6 ciliati; appendices lobis longiores, dorso seta valida munitæ*. Petala 0 v. duo dorsalia minutissima subulata. Stamina ad tubi $\frac{4}{5}$ līneæ rectæ inserta; episepala fere $\frac{1}{3}$ supra tubum exserta; epipetalorum 4 ventralia lōbos aequantia, 2 dorsalia paullo breviora et ceteris vix inferius inserta; omnia glaberrima. Stylus glaberrimus, sub anthesi ovarium glaberrimum duplum aequans, demum circ. 8^{mm} exsertus. Discus crassus, ovato-cordatus, deflexus, supra sulcatus, subtus convexus. Ovula 9–14.—A *Cuphea Liebmannii* Koehne proxima differt calycibus majoribus appendicibus manifestis seta munitis et praecipue pedicellis axillaribus nec interpetiolaribus.

Nebáj, Depart. Quiché, Guatemala, alt. 7,000^{ft}, May 1891, Heyde & Lux, no. 4,480.

IPOMÆA FISTULOSA Mart., var. **Nicaraguensis** Donnell Smith.—Volubilis, foliis cordiformibus acuminatis discoloribus supra pubescentibus subtus cano-velutinis. Sepala pubescentia orbicularia. Corolla ad 3–4-pollicaris. Semina flavocomosa.

Rio de Las Layas, Depart. Rivas, Nicaragua, alt. 120^{ft}, April 1893, Dr. W. C. Shannon, U. S. Army, no. 5,046.

Salvia Shannonii Donnell Smith. (§ CALOSPHACE.)—Suf-
frutex cano-pubescentis. Folia ovato-lanceolata sensim acuminata ad basim acuta obtusave serrulata discoloria supra scabriuscula subtus cum petiolis velutina, floralia subcon-
formia contractius acuminata flores superantia. Racemorum

breviter pedunculatorum verticillastra coarctata 6-14-flora, infirma subremota. Calycis subsessilis tubuloso-campanulati labia late ovata, posticum integrum anticum acute dentatum. Corolla quam calyx duplo fere longior ad medium subæqualiter labiata, tubo gracili vix ventricoso sub exerto, labii inferioris lobo medio reniformi bifido. Stylus superne unilater-aliter fimbriatus.

Leaves 3-4 \times 1 $\frac{1}{4}$ -1 $\frac{3}{4}$ ⁱⁿ, petioles 6-8¹ long. Racemes 3-5ⁱⁿ long; bracts sessile, herbaceous, pubescent, purplish, persistent, 8-10 \times 4-5¹. Calyx pubescent, virescent or colored, 5¹ long, lips 1 $\frac{1}{2}$ long. Corolla blue, 8¹ long, nearly glabrous galea 3¹ long; lip pubescent on back, 4¹ long, middle lobe 1 $\frac{1}{2}$ \times 3¹. Filament produced at articulation; anterior branch of connective 1 $\frac{1}{2}$ long, not dilated, glabrous, dentate. Inferior lobe of style $\frac{1}{2}$ long, the superior thrice longer.—Slopes of Volcan Chingo, Depart. Jutiapa, Guatemala, alt. 3,000^{ft}, Oct. 1892, Dr. W. C. Shannon, U. S. Army, no. 3,612.

Triplaris Macombii Donnell Smith.—Folia pedalia oblique lateque elliptico-ovata abrupte acuminata ad basim late rotundata glabrata subtus rubro-punctulata, margine pilosiusculo, costa subtus adpresse pilosa. Racemi feminei (qui soli suppetunt) singuli aut bini aut terni ex summis axillis orti itidem in paniculam terminalem folia superantem congesti. Calycis fructiferentis lobi exteriores quam tubus oblongus altero tanto longiores linguiformes, sinuum late rotundatorum marginibus retroflexis, lobi interiores tubum subæquantes eique $\frac{2}{3}$ -adnati setaceo-subulati ad basim plus minus appendiculati. Nuculæ nitidæ quam tubus $\frac{1}{3}$ brevioris facies ovatæ, stylis fauces haud attingentibus.

Branchlets smooth, sulcate, verrucose at nodes. Leaves membranaceous, undulate, inequilateral, 10-13 \times 6-7ⁱⁿ; caudate acumination blunt, 5¹ long; nervation immersed above, salient beneath, 17-19 lateral nerves straight and uniting in arches remote from margin, reticulation minute, longitudinal impressions nearly obsolete; petiole 8-11¹ long. Panicle densely flavo-sericeous, rachis flexuose; racemes densely flowered from near base, 8-12ⁱⁿ long; bracts persistent, acuminate-ovate, margins continuing united below, within plurinerved and colored; pedicels as long (4¹), deflexed. Calyx of matured fruit 26¹ long, pale-yellow; tube appressed-villoso, 9 \times 3¹; wings sparsely pilose, 17 \times 5¹, obtuse, narrowed toward base; interior lobes somewhat unequal, about 3¹ long.

Nutlet $5 \times 3\frac{1}{2}$, styles 2^1 long.—Most nearly related to *T. auriculata* Meisn. and *T. Arnottiana* Meisn., the originals of which in the Meisner herbarium of Columbia College have been compared.—Jiquilisco, Depart. Usulután, Salvador, alt. 220^{ft}, Jan. 1893, Dr. W. C. Shannon, U. S. A., no. 5,064. Named for Lieut. M. M. Macomb, U. S. Army, Engineer in Charge, Corps no. 1, Intercontinental Railway Commission.

Piper flavidum C. DC. in Donnell Smith Enum. Pl. Guat. 2: 66; (§ III. STEFFENSIA C. DC.); foliis brevissime petiolatis linear-lanceolatis basi æquali acutis apice acute acuminatis mucronulatisque utrinque glabris, nervo centrali circiter ad $\frac{1}{4}$ longitudinis nervos utrinque 3 alternos adscendentibus mittente, petiolo glabro basi ima vaginante, pedunculo glabro petiolum superante, amento florente folii dimidium æquante, bractæ vertice triangulari margine flavide hirsuto, bacca subtetragona apice subtiliter flavide hirtella.—Ramuli glabri internodiis brevibus, corticis collenchymate continuo zona fibrosa continua intus aucto, fasciculis intramedullaribus 2-seriatis. Limbi 8^{cm} longi 13^{mm} lati in sicco firmuli flavicantesque. Petioli ad 2^{mm} longi. Pedunculi 6^{mm} longi. Amentia florentia 3^{mm} crassa. Stamina 4.

Barranca de Rubelcruz, Depart. Alta Verapaz, Guatemala, alt. 2,500^{ft}, Apr. 1889, J. D. S., no. 1,744.

Piper Tuerckheimii C. DC. in Donnell Smith Enum. Pl. Guat. 2: 96; (§ III. STEFFENSIA C. DC.); foliis modice petiolatis, limbis 3^{cm} supra basin peltatis oblongo-ovatis basi rotundatis leviterque repandis apice acute acuminatis supra glabris subtus præsertim ad nervos hirtellis, nervo centrali circiter ad $\frac{1}{2}$ longitudinis nervos utrinque 3 oppositos adscendentibus mittente, lateralibus 4-5 e basi solutis tenuibus, amento quam folium plures breviore apice longe mucronato, pedunculo quam petiolus plures breviore, bractæ apice truncato-peltatae pelta triangulari margine hirtella, bacca subglobosa vertice hirsuta.—Ramuli dense hirtelli. Limbi ad 24^{cm} longi ad 12^{cm} lati. Petioli 4.5^{cm} longi hirtelli basi vaginantes. Pedunculi 8^{mm} longi hirtelli. Amenti pars baccifera 5^{cm} longa mucro 2^{mm} longus hirtellus. Stamina 4.

Pansamalá forest, Depart. Alta Verapaz, Guatemala, alt. 3,800^{ft}, Aug. 1886, von Türckheim, no. 1,038.

Piper Santa-rosanum C. DC. in Donnell Smith Enum. Pl. Guat. 2: 96; (§ STEFFENSIA C. DC.); foliis modice petiolatis

oblique rotundato-ovatis basi inaequali rotundatis subcordatisque apice obtusiuscule acuminatis utrinque dense velutinis 7-nerviis nervis 5 medianis validioribus, petiolo dense velutino basi ima vaginante, amento baccifero limbum aequante, pedunculo petiolum parum superante velutino, bractea spathulata apice rotundata utrinque et praesertim dorso hirsuta, ovario hirtello, bacca globoso-ovata hirtella.—*Frutex* 3-4^m altus. Ramuli dense velutini, cortex fasciculis collenchymateis discretis instructus fibris destitutus, fasciculi intramedullares uniseriati. Folia in sicco subrubescens. Limbi in sicco firmi circiter 12^{cm} longi 7.5^{cm} lati. Petioli 1^{cm} longi. Amenta baccifera 3^{mm} crassa. Stamina 4, antherae reniformi-globosae caducae filamentis circiter aequilongae.

River-bank near Santa Rosa, Depart. Baja Verapaz, Guatemala, alt. 5,000^{ft}, Apr. 1887, von Türckheim, no. 1,174, distributed as *P. patulum* Bertol.; Santa Rosa, Depart. Santa Rosa, Guatemala, alt. 4,000^{ft}, May 1892 and Nov. 1892, Heyde & Lux, nos. 3,463 and 3,833; Capetillo, Depart. Zacatepequez, Guatemala, alt. 4,300^{ft}, Mch. 1892, J. D. S., no. 3,590.

Piper variabile C. DC. in Donnell Smith Enum. Pl. Guat. 2: 66; (§ IV. CARPUNYA C. DC.); foliis modice petiolatis late ovatis basi truncato-rotundatis vel elliptico-ovatis basi subacutis omnibus apice acuminatis utrinque glabris, nervo centrali nervos ad $\frac{2}{3}$ longitudinis utrinque circiter 5 sursumque nervulos validos mittente, petiolo glabro basi ima vaginante, amento folium subaequante pedunculo quam petiolus paulo breviore, bractae vertice glabro triangulari superne breviter acutato unde subquadrangulari pedicelloque basi hirsuto, bacca obpyramidalo-trigona glabra.—Ramuli glabri. Limbi in sicco subcoriacei opaci fuscescentes late elliptici 16.5^{cm} longi 12.5^{cm} lati, elliptico-ovati 16^{cm} longi 8.5^{cm} lati. Petioli 1.5^{cm} longi. Amenta baccifera ad 6^{mm} crassa. Stamina 3.—Species foliorum forma in ramis amentiferis ipsis valde variabili insignis.

Mountain-forests near Coban, Depart. Alta Verapaz, Guatemala, alt. 4,300^{ft}, May 1879, von Türckheim, no. 434.

Piper Donnell-Smithii C. DC. in Donnell Smith Enum. Pl. Guat. 2: 95; (§ IV. CARPUNYA C. DC.); foliis breviter petiolatis lanceolatis basi aequali acutis apice longiuscule acute acuminatis utrinque glabris, nervo centrali circiter ad medium nervos utrinque 5 nervulosque validos mittente, peti-

olo basi ima vaginante, pedunculo petiolum æquante, amento quam folium pluries breviore, bracteæ apice turncato-peltatæ vertice triangulare marginæ hirtello pedicelloque lato hirtello, bacca parce hirtella.—Ramuli glabri tenues, cortex collenchymate proprio destitutus zona fibrosa continua instrutus, fasciculi intramedullares sub-2-seriati. Limbi ad 13^{em} longi ad 4^{em} lati, in sicco membranacei nigrescentes opaci. Petioli 7^{mm} longi. Amenta submatura ad 4^{em} longa 3^{mm} crassa. Stamina 3. Bacca obpyramidalo-trigona in sicco nigra.—Species *P. eucalyptifolium* Rudge mire simulans amentis angustioribus ramulis haud uno latere hirtellis et verisimiliter staminum numero ab eo discrepans, a *P. concinno* C. DC. bracteæ pelta hirtella, a *P. Costaricense* C. DC. amentis brevioribus distincta.

Pansamalá, Guatemala, alt. 4,000^{ft}, July, 1886, von Türckheim, no. 975.

Peperomia Cobana C. DC. in Donnell Smith Enum. Pl. Guat. 2: 66; foliis alternis longiuscule petiolatis lanceolatis utrinque glabris, nervo centrali nervos utrinque 4-5-6 mittente, amentis apice caulis et ramuli axillaris aphylli 3 alternis foliorum limbos circiter æquantibus, ovario basi rhachi impresso apice oblique subulato antice stigmatifero.—Erecta glabra. Limbi ad 13^{em} longi ad 5^{em} lati in sicco subcoriacei opaci nervis ægre cernendis. Petioli ad 3^{em} longi. Ramuli amentiferi pars infera sterilis 9^{em} longa. Amenti pedunculus ad 2^{em} longus. Amentum ipsum circiter 1^{mm} crassum. Bractea orbicularis.—Species *P. lancifoliae* Hook. proxima petiolis multo longioribus ab ea præcipue discrepans.

Near Coban, Guatemala, alt. 4,600^{ft}, June, 1879, von Türckheim, no. 78.

Peperomia Luxii C. DC.; foliis quaternis modice petiolatis e basi cuneato-ovobatis apice emarginulatis utrinque glabris indistincte 3-nerviis in sicco coriaceis, amentis terminalibus pedunculatis pedunculos suos circiter duplo foliorumque limbos circiter triplo superantibus densifloris, rhachi glabra, bractea orbiculari coriacea centro pedicellata, ovario semiimmerso ovato in stylum gracilem apice stigmatiferum terminato, bacca ovata stylo ea breviore apice mucronata.—Herba procumbens glabra, caule in sicco coriaceo 4-sulcato vix 2^{mm} crasso. Limbi opaci circiter 15^{mm} longi 8^{mm} lati. Petioli circiter 3^{mm} longi. Pedunculi 2^{em} longi. Amenta matura ad 5^{em} longa 1^{mm} crassa.

Ojo de Agua, Depart. Santa Rosa, Guatemala, alt. 3,500^{ft}, Sept., 1892, Heyde & Lux, no. 3,828.

Phoebe amplifolia Mez et Donnell Smith; foliis amplissimis, adultis supra glabris nitidisque vel secus nervos adpresso tomentellis, dense nervis immersis areolatis, subtus tomento brevi puberulo, ad nervos ferrugineo mollibus, latissime ellipticis, apice breviter subacuminatis, penninervibus; inflorescentia dense ferrugineo-tomentella, submultiflora, laxiuscule panniculata, foliis multo breviore; floribus dense ferrugineo-tomentellis; limbi segmentis æqualibus, subobtusis; filamentis pilosis quam antheræ multo brevioribus; antheris omnibus 4-locellatis; ovario glaberrimo.—Arbuscula videtur (ex ramorum habitu), ramulis crassis, dense adpresso ferrugineo-tomentellis basin versus cinerascentibus, striatim subangulatis; gemmis dense ferrugineo-tomentosis; cortice esipido, paullo mucoso. Folia petiolis usque ad 32^{mm} longis, validissimis, supra profunde canaliculatis, tomento peradpresso brevissimoque adultioribus cinereo obtectis stipitata, sparsa, rigide coriacea, supra (præter nervos adpresso cinereo-tomentellos) adulta saltem glabra nitidaque et dense venulis immersis areolata, subtus tomento brevi puberulo, ad nervos ferrugineo mollia valde prominenti-reticulata, latissime elliptica, basi breviter acuta apice breviter lateque subacuminata, ex specimine nostro usque ad 0.3^m longa, 0.16^m lata, cestis e nervio medio sub angulo 45–60° prodeuntibus, margine quam maxime recurvato, in statu sicco præsertim basin versus solemniter lateque replicato. Inflorescentia laxiuscule panniculata late subthyrsoidea, dense adpresso ferrugineo obtecta, foliis permulto brevior; pedicellis sæpius 4^{mm} vel paullo infra longis, bracteolis deciduis. Flores dense adpresso ferrugineo-tomentelli, limbi segmentis quam genitalia multo longioribus, æqualibus, lingulatis, apice subobtusis. Filamenta pilosa quam antheræ multo breviora, ser. III basi glandulis binis magnis, sessilibus aucta. Antheræ subquadraticæ, obtusæ, omnes quatrilocellatae, locellis ser. II exteriorum introrsum, ser. III sublateraliter dehiscentibus. Staminodia perconspicua filamento manifesto, piloso stipitata. Ovarium glaberrimum, subglobosum; stylo crasso subæquilongo; stigmate pulvinato. Bacca maxima (\pm 33^{mm} longa, 22^{mm} diam. metiens), bene ellipsoidea, cupulæ crassæ, subpateriformi, obscure duplicimarginatae, sensim conice in pedicellum valde incrassatum transeunti insidens.

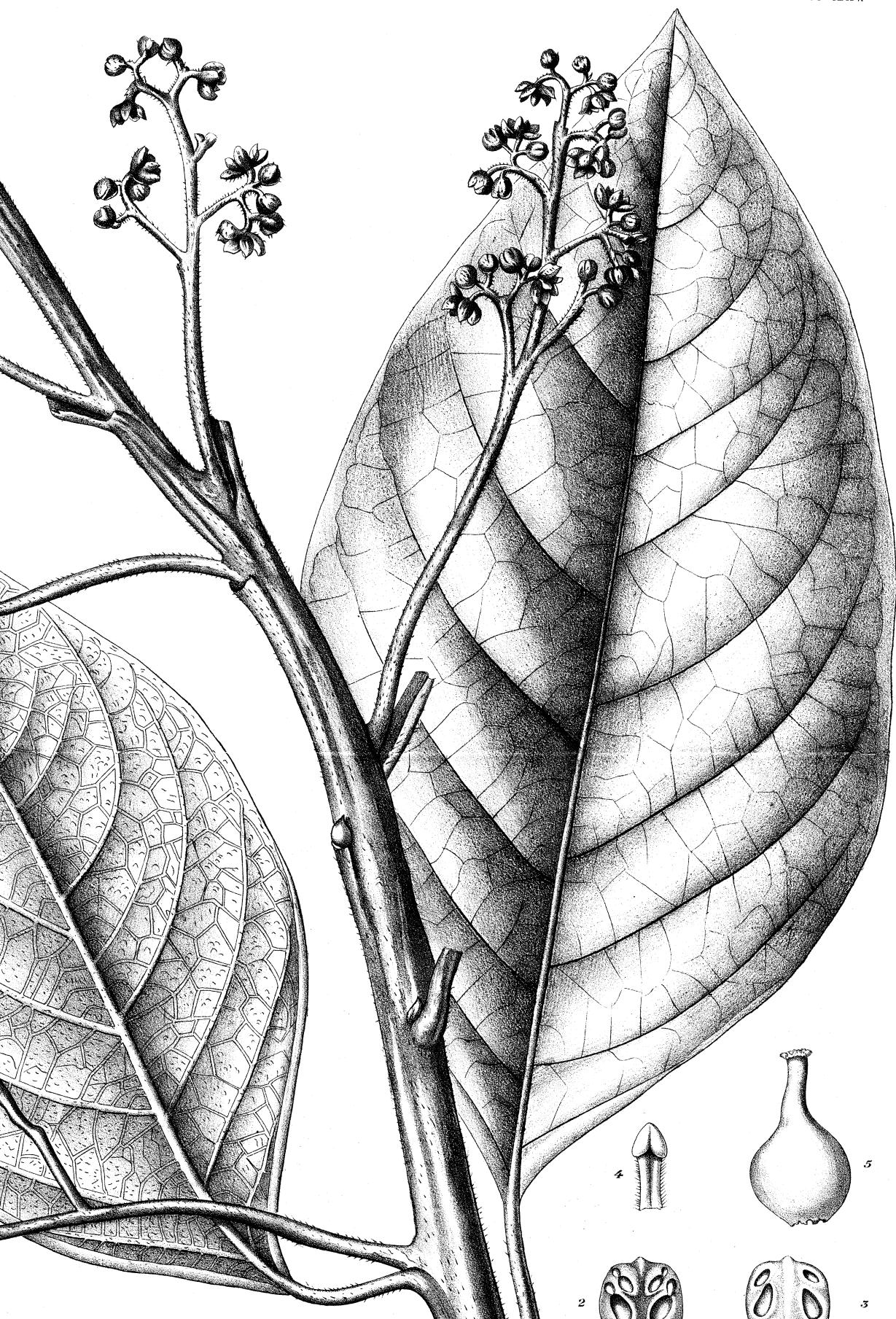
El Jute, Depart. Quiché, Guatemala, alt. 10,000^{ft}, Apr. 1892, Heyde et Lux, no. 3,033.

EXPLANATION OF PLATE XXIV.—Fig. 1, flowering and fruiting branch.—Fig. 2, posterior view of stamen ser. 1.—Fig. 3, anterior view of stamen ser. 3, with glands.—Fig. 4, posterior view of stamen ser. 4.—Fig. 5, Pistil. (Fig. 1 is natural size; the others are variously enlarged.)

Nectandra Heydeana Mez et Donnell Smith; foliis adultis præter costarum axillas subtus sæpius perconspicue barbellatas glabris, optime ellipticis, basi nunc rotundatis nunc breviter acutis, apice sueto acumine brevi sed eleganti præditis, utrinque valde prominulo-reticulatis; inflorescentia subcorymbosa vel subpyramidata, glaberrima; floribus hermaphroditis, glabris, \pm 7^{mm} diam. metientibus; filamentis ser. I, II nullis; ovario glabro, stylo subæquilongo. — Arbuscula 12–24^{ped} alta (ex coll. Heyde et Lux!), ramulis glaberrimis, atris vel cinerascentibus, apicem versus lineatim angulosis, gemmis dense sulfureo-strigulosis nonnunquam minute sericantibus, cortice esipido. Folia petiolis usque ad 20^{mm} longis (sed sæpius conspicue brevioribus quoque), supra leviter canaliculatis, sub lente primum peradpresse sulfureo-strigulosis demum glabratis stipitata, sparsa, tenuiter membranacea vel membranacea, præter costarum axillas subtus sæpius perconspicue barbellatas glaberrima, utrinque valde prominenti-reticulata supra (sicca) olivacea nitida, subtus minute rubenti-viridia subnitida, optime elliptica, basi sueto rotundata rarius breviter acuta, apice sæpius acumine brevi sed eleganti prædita, \pm 0.16^m longa, 72^{mm} lata, costis e nervio medio sub angulo 50–60° prodeuntibus, margine haud recurvulo, sæpius eleganter undulato. Inflorescentia subpauciflora, subcorymbose vel subpyramidatim panniculata, glaberrima, foliis brevior; pedicellis longis (sæpius 7^{mm} metientibus); bracteolis deciduis. Flores hermaphroditi, glabri, \pm 7^{mm} diam. metientes, limbi segmentis patentibus, æqualibus, ellipticis, apice rotundatis. Filamenta ser. I, II desunt; ser. III glabra sed generis ritu papillosa, antheris duplo vel ultra breviora, percrassa, basi glandulis binis minutis, globosis, sessilibus aucta. Antheræ ser. exteriorum suborbicularis, apice bene rotundatæ, papillosæ. Ovarium glabrum, subglobosum, stylo crasso, subæquilongo. Fructus ignotus.

Santa Rosa, Depart. Santa Rosa, Guatemala, alt. 3,000^{ft}, Nov. 1892 and Jan. 1893, Heyde et Lux, nos. 4,260 and 4,578.—PLATE XXV.

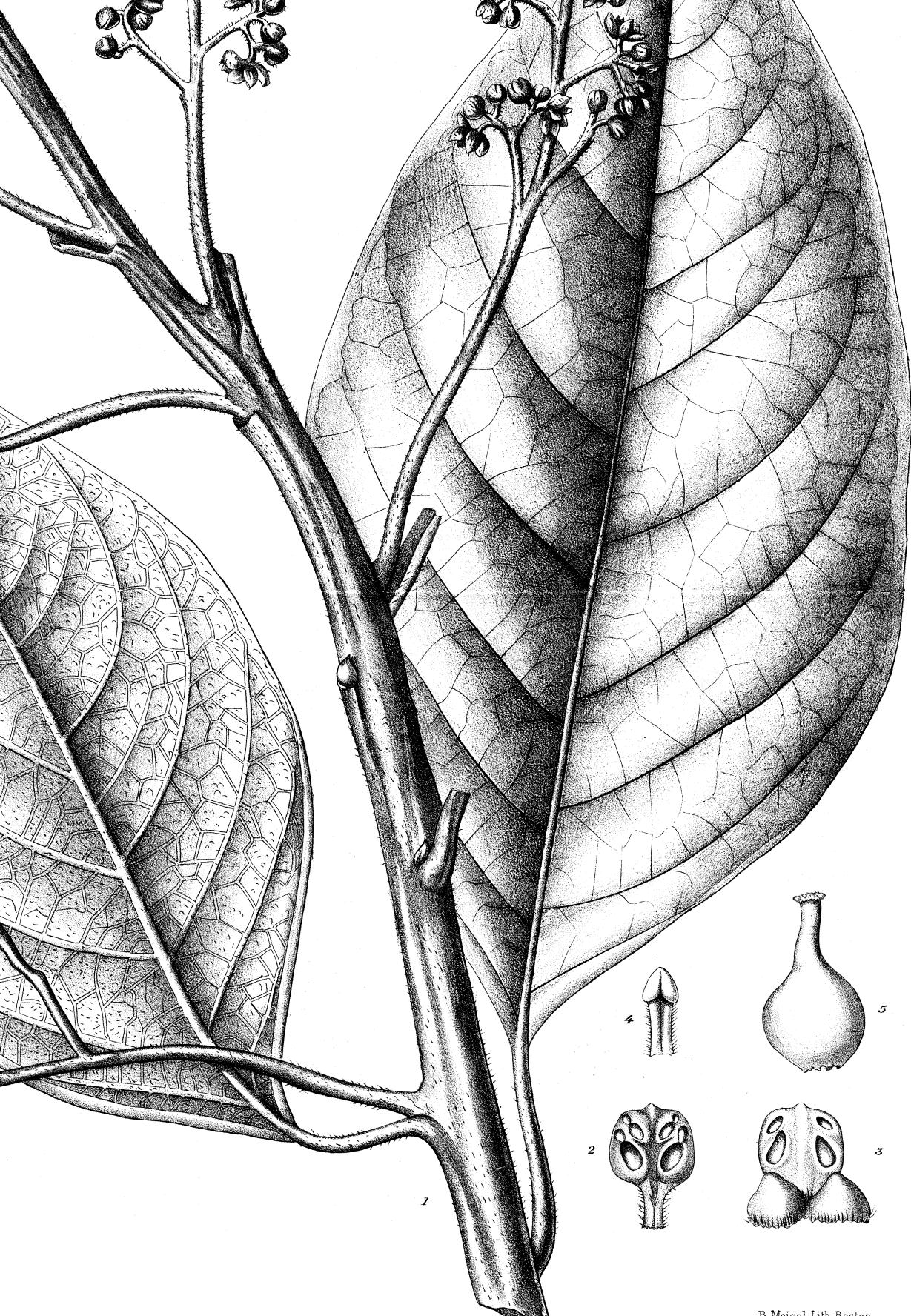






Thea Mez ad sicc. del

PHOEBE AMPLIFOLIA, Mez & Donnell Smith.



PHOEBE AMPLIFOLIA, Mez & Donnell Smith.

B. Meisel, Lith. Boston.







Thea Mez ad sicc. del.

NECTANDRA HEYDEANA, Mez & Donnell Smith.



B. Meisel, Lith. Boston.

NECTANDRA HEYDEANA, Mez & Donnell Smith.

Pedilanthus macradenius Donnell Smith. (§EUPEDILANTHUS Boiss.)—*Folia glabra ampla obovato-oblonga angulo obtusissimo terminantia, basi obtusa. Cymæ ex axillis supremis ortæ breves oligocephalæ, bracteis oblongo-ovatis pedunculos superantibus. Involucrum ad basim rectangulare, calcaris quam tubus paullo minoris deflexi glandulas 2 majusculas gerentis labiis ovatis sub apice plica intrusa auctis, tubi lobis binis inferioribus ovatis cano-fimbriatulis superiore cum intermediis aequilongis alte connato. Bracteolæ numerosissimæ flores masculos aequantes, pedicellis masculis et femineo filamentisque glabris. Capsula depresso-sphaerica lineis dehiscentiæ 6 latis albis notata.*

Arboreous. Leaves olive-green, at apex of branchlets $4-6 \times 2-3^{\text{in}}$; petioles smooth, 3^{l} long. Bracts rubescent beneath hoary pubescence, $6 \times 3^{\text{l}}$. Peduncles pubescent. Involucrum rubescent, smooth within, $5-6^{\text{l}}$ long, spur $3\frac{1}{2} \times 2^{\text{l}}$ with oval glands 1^{l} long, tube $4 \times 3^{\text{l}}$. Capsule 4^{l} in diam., coccules ecarinate, seeds trigonal-globose.—Canival, Depart. Huehuetenango, Guatemala, alt. 3,200^{ft}, Dec. 1891, Dr. W. C. Shannon, U. S. Army, no. 412.

Echmea Friedrichsthalii Mez et Donnell Smith; foliis super vaginam longe paullo angustatis, spinulis minutis armatis vel interioribus saepius fere omnino inermibus; inflorescentia bipinnatim vel imperfecte tripinnatim panniculata, e ramulis distiche florigeris subpatentibus composita, densiuscula sub-ellipsoidea; bracteolis florigeris reflexo-patentibus, latissime ovatis breviterque (nec pungenter) acuminulatis, ovarii medium haud attingentibus; floribus ad 17^{mm} longis, sessilibus; sepalis liberis vel minutissime tantum connatis, apice in aciculum minutissimum (fructiferis saepius deciduum) dorsalem productis; petalis in spinulam terminalem desinentibus, altiuscule ligulatis; filamentis ser. II cum petalis peralte connatis; placentis interno loculorum angulo apici affixis.—Epiphyta (ex cl. Friedrichsthal !), acaulis, florifera ad 0.5^{m} alta. Folia e vagina ovali, margine nunc integerrima nunc dissite spinulis parvis, patentibus aucta, praesertim dorso adpresse allutaceo-lepidota in laminam ensiformem producta, saepius 0.6^{m} vel paullo ultra longa, submembranacea vel tenuiter chartacea, apice longius breviusve acuta, spinulis haud ultra 1^{mm} longis praedita vel interiora fere subinermia, interiora saltem apicem versus pulchre rubentia, subglabra. Inflorescentia multiflora, apicem usque e ramulis distiche florigeris, subpatentibus, vix

ultra 55^{mm} longis composita, foliis brevior, in scapi gracilis, glabri vel perparce lepidoti, vaginis pulchre rubentibus membranaceis, suberectis, lanceolatis perlongeque acutis, inferioribus margine minutissime spinulosis superioribus integerrimis, paullo lepidotis, internodia superantibus praediti apice elata, ovoidea vel ellipsoidea, ± 0.15^m longa, 90^{mm} diam. metiens, glaberrima; ramulis conspicue undulatis, 6-10-floris; bracteis primariis infimis anguste lanceolatis, peracutis, ramulos axillares ultra dimidium aequantibus, reflexis; bracteolis florigeris 3.5-5^{mm} longis, reflexo-patentibus, submembranaceis, tenuissime solum saepiusque obscure venoso-lineatis, glabris, latissime ovatis breviterque (nec pungenter) acuminulatis, satis concavis. Flores per anthesin secus ramulos stricte erecti, sessiles, 17^{mm} longi, glabri; sepalis liberis vel basi minutissime solum connatis, 5.5^{mm} longis, apice in aciculum minutissimum, brunneum, dorsalem productis, latere tecto in alam maximam aciculo multo altiore dilatatis. Petala 13^{mm} longa, ex ungue linearis in laminam angustam, sublanceolatam, peracute in spinulam terminalem transeuntem dilatata, 2^{mm} a basi ligulis binis profunde fimbriato-incisis aucta. Stamina petalis paullo breviora, filamentis anguste linearibus, tenuibus, ser. I liberis, ser. II cum petalis peralte (ultra laminæ basin) intime connatis; antheris luteis, fere 3^{mm} longis, lanceolatis, utrinque sed praesertim apice acutis, prope medium dorsifixis. Ovarium subglobosum, longitudinaliter sulcatum, ad 7^{mm} longum; tubo epigyno subnullo; stylo antheras exakte aequante, gracili; stigmatibus longe divisis, perangustis, laxe spiraliter contortis. Bacca coerulea!, globosa, *Pisi* magnitudine, sepalis persistentibus tenuiter conice conniventibus coronata; seminibus allutaceis, vix 2^{mm} longis.

Isla de Catina, Rio San Juan, Nicaragua,¹ 1839, Friedrichsthal, no. 609, (herb. Vindob.). Rio Jiménez, Llanos de Santa Clara, Comarca de Limón, Costa Rica, alt. 650^{ft}, Apr. 1894, J. D. S., no. 4,962.

Pitcairnia puberula Mez et Donnell Smith; foliis exterioribus ignotis, interioribus haud petiolatis, anguste lanceolatis, integerrimis, subtus junioribus lepidibus albis pilos magnos simulantibus furfuraceis; inflorescentia simplicissima,

¹Mr. Hemsley has remarked, that all of Friedrichsthal's plants in the Kew herbarium are ticketed as from Guatemala; and this is the case also with the Vienna specimen above cited. In fact, the collections were made in Nicaragua and Costa Rica.

medium usque laxiuscule, apicem versus dense racemosa, multiflora; foliolis scapalibus internodia longe superantibus; bracteis maximis, triangulo-lanceolatis, infimis flores axillares triplo vel ultra superantibus; floribus pedicellis brevibus crassisque stipitatis; sepalis anguste triangularibus, haud carinatis; petalis eligulatis; seminibus utroque polo tenuiter caudatis.—Imperfecte solum cognita, florifera vix ultra 0.4^m alta. Folia rosulae desunt. Scapus validus, erectus, foliis permanente brevior, lepidibus araneosis cinereis vel albidis puberulus, dense foliolis iis rosulae absque dubio aequalibus, anguste lanceolatis, longe peracutis, viridibus, supra glabris subitus junioribus lepidibus albidis pilos magnos simulantibus dense furfuraceis, adultis \pm perfecte glabratris, omnibus erectis internodiaque perlonge superantibus, inflorescentiamque medio fere aequalibus usque ad 18^{mm} latis, omnino inermibus instructus. Inflorescentia simplicissima, medium usque laxiuscule apicem versus dense racemosa, paullo infra 0.2^m longa, 40^{mm} diam. metiens, cylindrica apiceque rotundata, multiflora; rhachi recta, haud vel vix angulata, lepidoto-puberula; bracteis inflorescentiae basin versus persensim in folia scapalia trans-euntibus triangulo-lanceolatis longissimeque acutis, erectis, infimis flores axillares triplo vel ultra superantibus, supremis quam sepalia subduplo brevioribus. Flores deflorati fructiferi solum cogniti stricte erecti, pedicellis percrassis, lepidoto-puberulis, haud ultra 4^{mm} longis stipitati; sepalis subglabris, ad 21^{mm} longis, e basi 5^{mm} lata in apicem acutam sensim angustatis triangularibus, symmetricis, haud carinatis. Petala (nonne revera, ut ex sicco videtur alba vel lutea?) eligulata. Genitalia ignota. Capsula matura \pm 18^{mm} longa, ad $\frac{5}{6}$ longit. supera, tenuiter conice perlongeque acuta, basin usque dehiscens, seminibus 2.5^{mm} longis, fere rectis, utrinque cauda tenui egregiaque appendiculatis.—OBS. Species persingularis, Eupitcairnieis adscribenda sed pedicellis crassis bracteisque infimis saltem perelongatis quam maxime notabilis. Binæ adhuc solum hujus gregis species e Guatemala allatae mihi cognitæ, quæ petalis eligulatis gaudent, utraque infeliciter imperfecta solum mihi ante oculos. (MEZ.)

Cenaguilla, Depart. Santa Rosa, Guatemala, alt. 4,000^{ft}, Sept. 1892, Heyde & Lux, no. 3,879.

Anthericum apodastanthum Donnell Smith. (Subgenus HESPERANTHES Baker.)—Folia radicalia linearia gramoidea valde 15–17-nervata, margine vix ciliolata. Scapus sesqui-

pedalis teres glaber ebracteatus. Racemus (in exemplaribus mihi suppetentibus) simplex flexuosus, nodis inferioribus remotissimis. Bracteæ interiores ovatæ cuspidatæ, exteriores lanceolatæ denique subulato-attenuatæ. Pedicelli terni in medio articulati. Perianthii segmenta perspicue 3-nervata, interiora in sicco lutea. Filamenta muriculata nunc ovarium aut antheras aequantia nunc eis duplo longiora. Stylus nunc ovarii nunc perianthii longitudinem aequiparans. Capsula oblongo-ovalis perianthio marcido $\frac{1}{2}$ brevior semina in loculo quoque 9-10 habens.

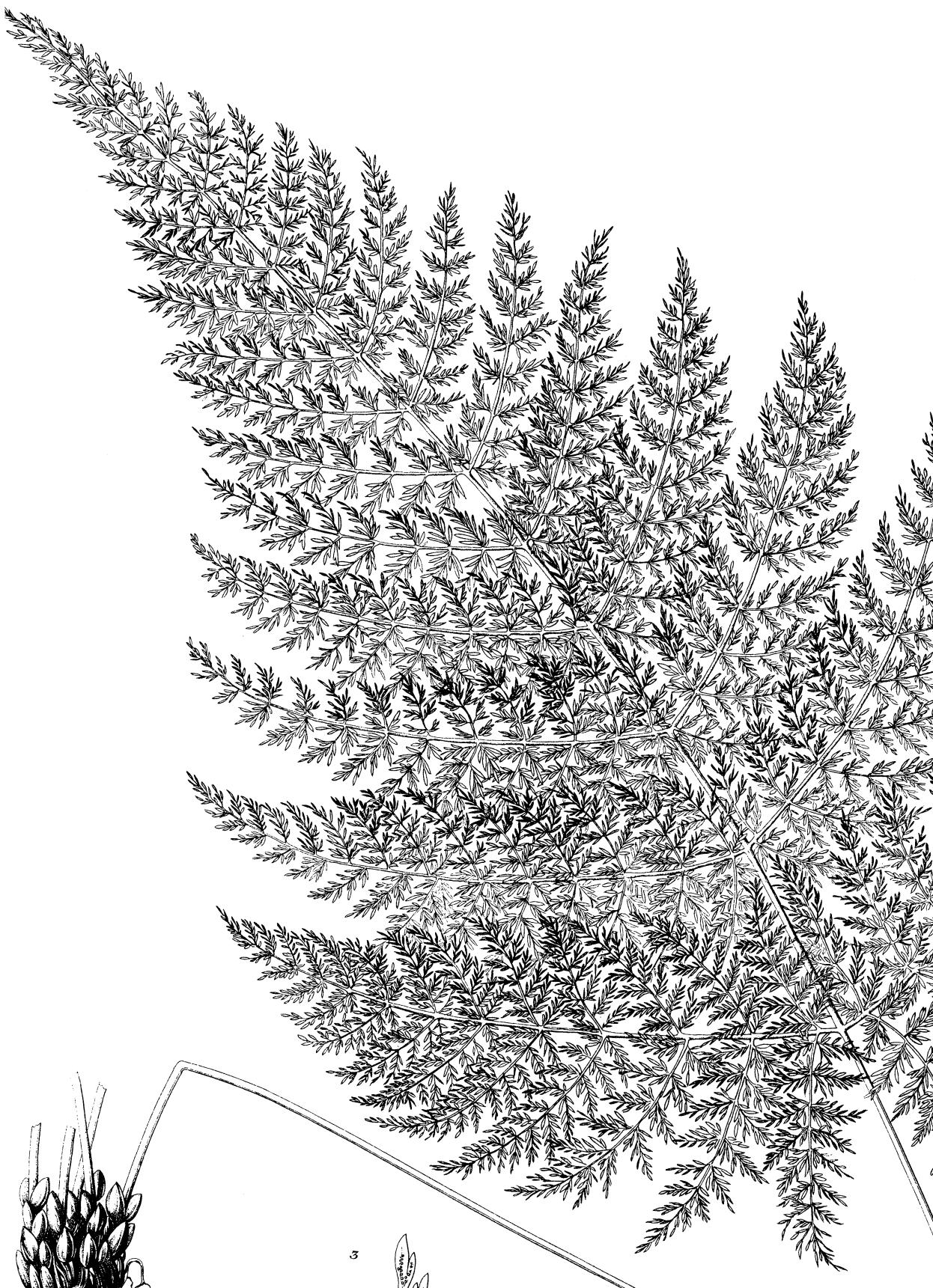
Rhizome not seen. Leaves 12-15ⁱⁿ × 2-3^l. Raceme 7-8ⁱⁿ long, lower internodes 1 $\frac{1}{2}$ -3ⁱⁿ long, exterior bracts at length 1ⁱⁿ long, pedicels 4-9^l long. Perianth 6-7^l long. Anthers 1 $\frac{1}{2}$ ^l long.—Indicated by Mr. J. G. Baker as undescribed and nearest to his *A. Skinneri*.—San Bartolo, Depart. Zacatepequez, Guatemala, alt. 5,000^{ft}, May, 1890, Heyde & Lux, no. 4,644.

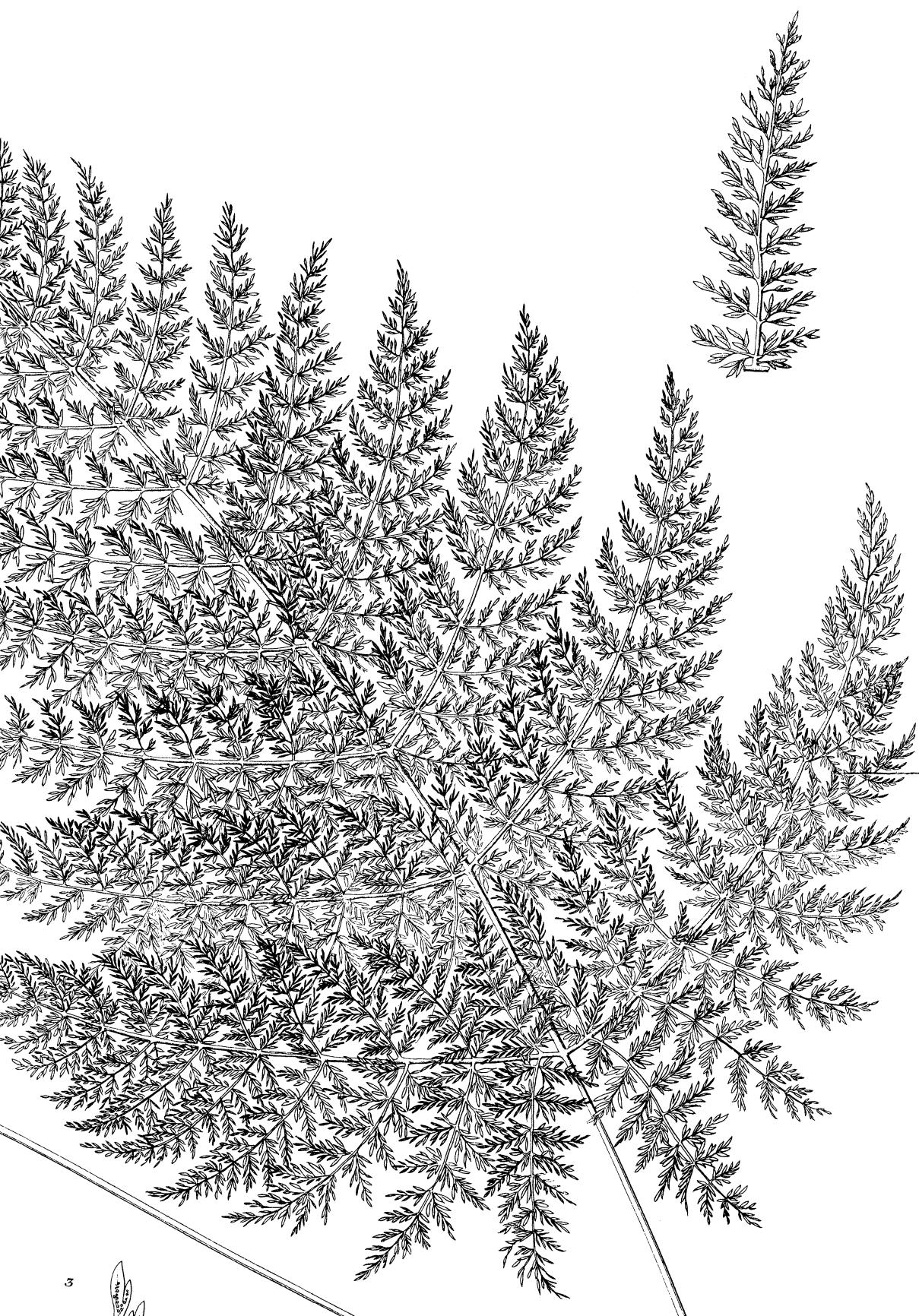
Gymnogramme sciatriphis Donnell Smith.—Stipites e caudice brevi crasso caespitosi graciles spithamæ straminei glabri, basi paleacea. Frondes acuminato-ovatæ pedales glabrae 4-5-pinnatim decompositæ, jugis plurimis confertis, pinnis pinnulisque oppositis e basi truncata subsessili ovatis lanceolatisve, pinnis infimis maximis, pinnulis ser. II rhomboideis 1-2-fidis, ultimis ellipticis deorsum attenuatis plerumque bifurcatis, segmentorum nervio unico infra medium usque ad furcam sorifero.

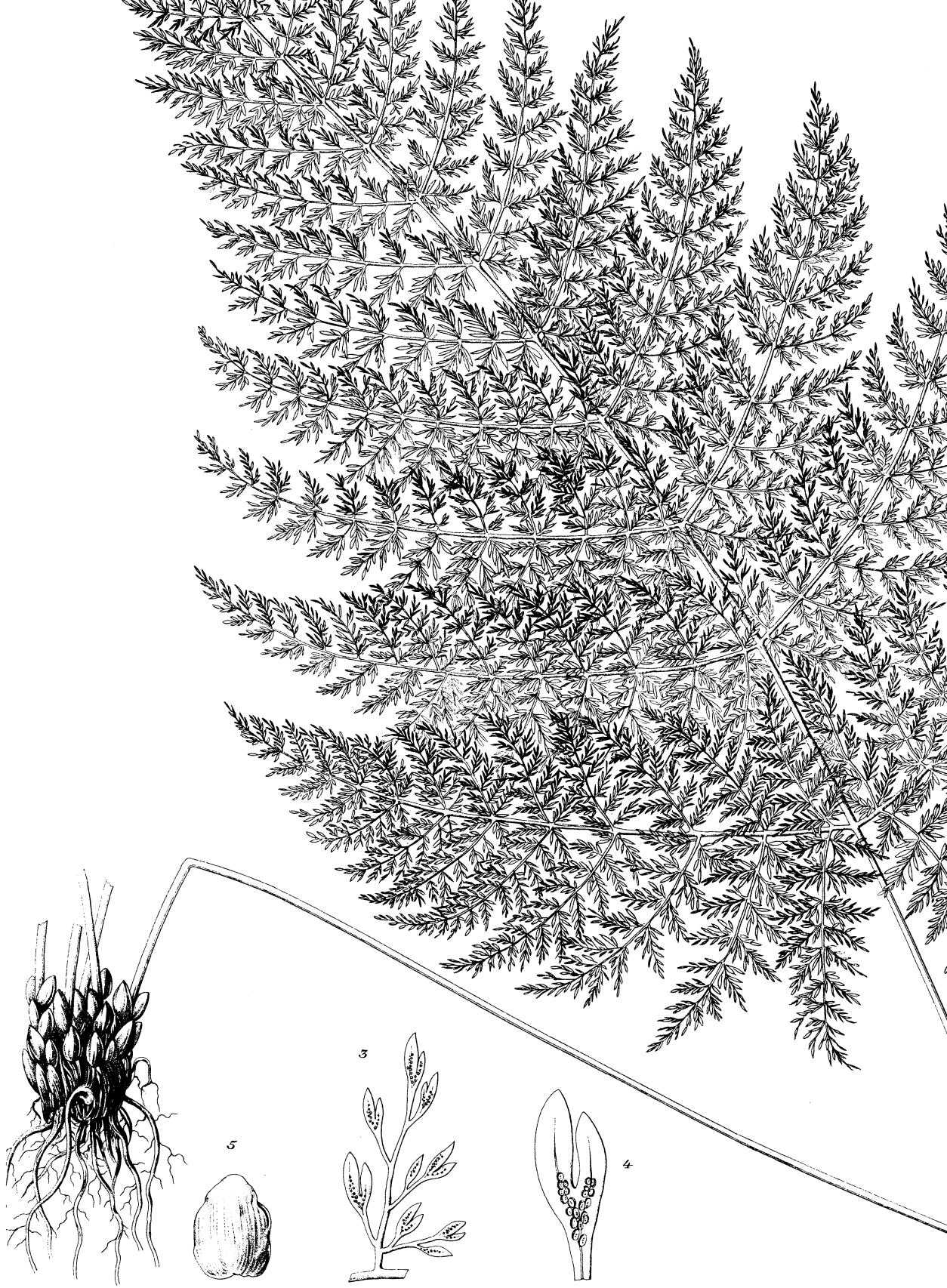
Scales ovate, 3-4^l long, rigid, blackish, imbricating. Stipes and rachises canaliculate. Sterile and fertile fronds similar, 20-26-jugate. Basal pinnæ acuminate-deltoid, spreading, incurved, 6-7 $\frac{1}{2}$ ⁱⁿ long, 15-20-jugate; its lower pinnules 2ⁱⁿ long, 9-12-jugate. Segments oblong, acute, 1-1 $\frac{1}{2}$ ^l long, fruit-dots cylindrical.—To be grouped with *G. chaerophylla* Desv. and *G. schizophylla* Baker, which differ chiefly by absence of caudex and of scales, circumscription and loose pinnation of fronds.—Shaded precipitous banks of Rio Jiménez, Llanos de Santa Clara, Comarca de Limón, Costa Rica, alt. 650^{ft}, Apr. 1894, J. D. S., no. 5,084.

Baltimore, Md.

EXPLANATION OF PLATE XXVI.—Fig. 1, frond.—Fig. 2, pinnule.—Fig. 3, pinnule of second order.—Fig. 4, ultimate pinnule.—Fig. 5, scale from base of stipe. (Figure 1 is somewhat reduced; the others are variously enlarged.)







C.E. Faxon, del.

GYMNOGRAMME SCIATRAPHIS Donnell Smith.



B. Meisel, Lith. Boston.

GYMNOGRAMME SCIATRAPHIS Donnell Smith.